

**1. AMENDMENT**

**1.1 IN THE CLAIMS:**

1. (Currently Amended) A composition comprising:

(a) at least a first compound of the formula:



wherein R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl, in an amount of from about 0.1 μM to about 1000 μM; said amount effective to prolong the freshness or the aesthetic appearance of a plant, a flower, a fruit or a plant cutting;

(b) at least a first plant hormone selected from the group consisting of an auxin, a gibberellin and a cytokinin; and  
(c) a horticulturally-acceptable vehicle.

2. (Original) The composition of claim 1, wherein said compound has the formula:



wherein R is optionally branched or straight chain, saturated C<sub>8</sub>-C<sub>20</sub> alkyl.

3. (Previously Presented) The composition of claim 2, wherein said compound is selected from the group consisting of NAE10:0 (*N*-caproylethanolamine), NAE 11:0, NAE12:0 (*N*-lauroylethanolamine), NAE13:0, NAE14:0 (*N*-myristoylethanolamine), NAE15:0, NAE16:0 (*N*-palmitoylethanolamine), NAE17:0, NAE18:0 (*N*-stearoylethanolamine), NAE19:0, and NAE20:0 (*N*-arachidoylethanolamine).

4. (Previously Presented) The composition of claim 3, wherein said compound is selected from the group consisting of NAE10:0 (*N*-caproylethanolamine), NAE12:0 (*N*-lauroylethanolamine), NAE14:0 (*N*-myristoylethanolamine), NAE16:0 (*N*-palmitoylethanolamine), NAE18:0 (*N*-stearoylethanolamine), and NAE 20:0 (*N*-arachidoylethanolamine).

5. (Previously Presented) The composition of claim 4, wherein said compound is *N*-lauroylethanolamine (NAE12:0) or *N*-myristoylethanolamine (NAE14:0).

6. (Original) The composition of claim 1, wherein said compound has the formula:



wherein R is optionally branched or straight chain, unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl.

7. (Previously Presented) The composition of claim 6, wherein said compound is selected from the group consisting of NAE10:1, NAE10:2, NAE10:3, NAE11:1, NAE11:2, NAE11:3, NAE12:1, NAE12:2, NAE12:3, NAE13:1, NAE13:2, NAE13:3, NAE14:1, NAE14:2, NAE14:3, NAE15:1, NAE15:2, NAE15:3, NAE16:1 (*N*-palmitoleylethanolamine), NAE16:2, NAE16:3, NAE17:1, NAE17:2, NAE17:3, NAE18:1 (*N*-vaccenoylethanolamine), NAE18:2 (*N*-linoleoylethanolamine), NAE18:3 (*N*-linolenoylethanolamine), NAE19:1, NAE19:2, NAE19:3, NAE20:1, NAE20:2 (8,11-icosadienoylethanolamine), and NAE20:3 (5,8,11-icosatrienoylethanolamine).

8. (Previously Presented) The composition of claim 7, wherein said compound is NAE10:1, NAE10:2, NAE11:1, NAE11:2, NAE11:3, NAE12:1, NAE12:2, NAE12:3, NAE13:1, NAE13:2, NAE13:3, NAE14:1, NAE14:2, NAE14:3, NAE15:1, NAE15:2, NAE15:3, NAE16:1 (*N*-palmitoleylethanolamine), NAE16:2, or NAE16:3.

9. (Original) The composition of claim 1, wherein said vehicle comprises at least a first nutrient source for said plant, flower, fruit, or plant cutting.

10. (Original) The composition of claim 9, wherein said nutrient comprises a lipid, a carbohydrate, or an amino acid.

11. (Original) The composition of claim 10, wherein said carbohydrate is selected from the group consisting of lactose, dextrose, fructose, sucrose, glucose sorbitol, mannitol, and inositol.

12. (Original) The composition of claim 1, wherein said vehicle comprises at least a first surfactant.

13. (Previously Presented) The composition of claim 12, wherein said surfactant is selected from the group consisting of polyoxyethylene sorbitan monolaurate, monopalmitate monostearate, ethoxylated alkyl phenols and a hydrogenated oil.

14. (Original) The composition of claim 1, wherein said vehicle comprises at least a first buffer.

15. (Previously Presented) The composition of claim 14, wherein said buffer is selected from the group consisting of acetate, bicarbonate, citrate, succinate, malate, Tris-(hydroxymethyl)-aminomethane (TRIS); 2-(N-Morpholino)-ethanesulfonic acid (MES); N-[2-hydroxyethyl]piperazine-N'-[2-ethanesulfonic acid] (HEPES); 3-(N-Morpholino)-propanesulfonic acid (MOPS); N,N-Bis-(2-hydroxyethyl)-2-aminoethanesulfonic acid (BES); and Bis-(2-hydroxyethyl)-imino-tris-(hydroxymethyl)-methane (BIS-TRIS).

16. (Original) The composition of claim 1, wherein said vehicle comprises at least a first osmoregulant.

17. (Original) The composition of claim 16, wherein said osmoregulant is selected from the group consisting of a salt, a carbohydrate, a polyol, and a polyethylene glycol.

18.-19. (Canceled)

20. (Original) The composition of claim 1, further comprising at least a first antifungal, bacteriostatic, or bactericidal agent.

21. (Original) The composition of claim 20, wherein said bactericidal agent is selected from the group consisting of 8-hydroxyquinoline citrate, sodium dichloroisocyanurate, and 1,3-dichloro-5,5-dimethylhydantoin.

22. (Original) The composition of claim 1, further comprising an alcohol.

23. (Previously Presented) The composition of claim 1, wherein said compound is *N*-lauroylethanolamine (NAE12:0) or *N*-myristoylethanolamine (NAE14:0), and wherein said composition further comprises a lecithin.

24. (Original) The composition of claim 1, further comprising at least a second anti-senescent component.

25. (Previously Presented) The composition of claim 24, wherein said second anti-senescent component comprises a second distinct *N*-acylethanolamine compound selected from the group consisting of NAE10:0 (*N*-caproylethanolamine), NAE12:0 (*N*-lauroylethanolamine), NAE14:0 (*N*-myristoylethanolamine), NAE16:0 (*N*-palmitoylethanolamine), NAE18:0 (*N*-stearoylethanolamine), NAE20:0 (*N*-arachidoylethanolamine), NAE16:1 (*N*-palmitoleoylethanolamine), NAE18:1 (*N*-vaccenoylethanolamine), NAE18:2 (*N*-linoleoylethanolamine), NAE18:3 (*N*-linolenoylethanolamine), NAE20:1, NAE20:2 (8,11-icosadienoylethanolamine), and NAE20:3 (5,8,11-icosatrienoylethanolamine).

26. (Original) A kit comprising the composition of claim 1, and instructions for using said kit to delay the senescence of said plant, flower, fruit, or plant cutting.

27. (Currently Amended) A method of delaying the senescence of a plant, flower, fruit, or plant cutting, said method comprising providing to said flower, fruit, or plant cutting a solution comprising a senescence-delaying amount of:

(a) a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl; or

(b) the composition of claim 1, claim 64 or claim 71.

28. (Original) The method of claim 27, wherein said providing comprises applying said solution to said plant, flower, fruit, or plant cutting.

29. (Original) The method of claim 28, wherein said applying comprises spraying, coating, soaking, storing or transporting said plant, flower, fruit, or plant cutting with said solution for a length of time effective to delay said senescence.

30. (Original) The method of claim 27, wherein said solution is applied to said plant, flower, fruit, or plant cutting under ambient temperature conditions.

31. (Original) The method of claim 27, wherein said solution is applied to said plant, flower, fruit, or plant cutting under temperature conditions of from about 4°C to about 15°C.

32. (Original) The method of claim 27, wherein said providing comprises administering said solution to the plant while under cultivation.

33. (Original) The method of claim 32, wherein said providing comprises directly administering said solution to the roots, leaves, or flowers of said plant.

34. (Original) The method of claim 27, wherein delaying said senescence preserves or improves the appearance, fragrance, freshness, or aesthetic characteristics of said plant, flower, fruit, or plant cutting.

35. (Original) The method of claim 27, wherein delaying said senescence reduces the droop, wilt, bloom loss, leaf loss, needle drop, or rate of dehydration of said plant, flower or plant cutting.

36. (Original) The method of claim 27, wherein delaying said senescence prolongs or extends the appearance, taste, quality, or shelf life of said fruit.

37. (Original) The method of claim 27, wherein said plant cutting is severed from said plant during or after cultivation of said plant.

38. (Original) The method of claim 27, wherein said plant cutting comprises a bulb, a bloom, a bud, a flower, a petal, a stem, a branch, a rhizome, a bract, a fruit, a needle, or a leaf.

39. (Original) The method of claim 27, wherein said plant is selected from the group consisting of roses, orchids, tulips, daffodils, hyacinths, carnations, chrysanthemums, baby's breath, daisies, gladiolus, agapanthus, anthuria, Protea, Heliconia, Strilitzia, lilies, asters, irises, delphiniums, liatris, lisianthus, statis, stephanotis, freesia, dendrobiums, sunflowers, snap dragons, and ornamental foliage.

40. (Original) The method of claim 39, wherein said ornamental foliage comprises cut leaves, stalks, stems, branches, limbs, or cut trees.

41. (Original) The method of claim 40, wherein said ornamental foliage comprises coniferous foliage.

42. (Original) The method of claim 41, wherein said ornamental foliage comprises juniper, fir, pine, cedar, or spruce foliage.

43. (Original) The method of claim 40, wherein said ornamental foliage comprises Christmas or holiday trees, wreaths, or garlands.

44. (Original) The method of claim 27, wherein the final concentration of said compound in said solution is between about 0.2  $\mu$ M and about 800  $\mu$ M.

45. (Original) The method of claim 44, wherein the final concentration of said compound in said solution is between about 0.4  $\mu$ M and about 400  $\mu$ M.

46. (Original) The method of claim 45, wherein the final concentration of said compound in said solution is between about 2  $\mu$ M and about 200  $\mu$ M.

47. (Original) The method of claim 46, wherein the final concentration of said compound in said solution is between about 4  $\mu$ M and about 100  $\mu$ M.

48. (Original) The method of claim 27, wherein said solution is provided to said plant, flower, fruit, or plant cutting, for a time of from about 10 minutes to about 28 days.

49. (Original) The method of claim 48, wherein said solution is provided to said plant, flower, fruit, or plant cutting, for a time of from about 30 minutes to about 21 days.

50. (Original) The method of claim 49, wherein said solution is provided to said plant, flower, fruit, or plant cutting, for a time of from about 1 hour to about 14 days.

51.-58. (Canceled)

59. (Previously Presented) The composition of claim 5, wherein said compound is *N*-lauroylethanolamine (NAE12:0).

60. (Previously Presented) The composition claim 1, further comprising a lecithin.

61. (Previously Presented) The composition claim 60, wherein said lecithin is a soy lecithin.

62. (Previously Presented) The method of claim 27, comprising providing to said flower, fruit, or plant cutting a solution comprising a senescence-delaying amount of a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl.

63. (Previously Presented) The method of claim 27, comprising providing to said flower, fruit, or plant cutting a solution comprising a senescence-delaying amount of the composition of claim 1.

64. (Currently Amended) A composition comprising: (a) at least a first compound selected from the group consisting of NAE10:0 (*N*-caproylethanolamine), NAE12:0 (*N*-lauroylethanolamine), NAE14:0 (*N*-myristoylethanolamine), NAE18:0 (*N*-stearoylethanolamine), and NAE20:0 (*N*-arachidoylethanolamine) in an amount of from about 0.1  $\mu$ M to about 1000  $\mu$ M; said amount effective to prolong the freshness or the aesthetic appearance of a plant, a flower, a fruit or a plant cutting; (b) a lecithin; and (c) a horticulturally-acceptable vehicle that comprises at least one surfactant.

65. (Previously Presented) The composition of claim 64, wherein said compound is selected from the group consisting of NAE10:0 (*N*-caproylethanolamine), NAE11:0, NAE12:0 (*N*-lauroylethanolamine), NAE13:0, NAE14:0 (*N*-myristoylethanolamine), NAE15:0, NAE17:0, NAE18:0 (*N*-stearoylethanolamine), NAE19:0, and NAE20:0 (*N*-arachidoylethanolamine).

66. (Previously Presented) The composition of claim 65, wherein said compound is selected from the group consisting of NAE10:0 (*N*-caproylethanolamine), NAE12:0 (*N*-lauroylethanolamine), NAE14:0 (*N*-myristoylethanolamine) and NAE18:0 (*N*-stearoylethanolamine).

67. (Currently Amended) The composition of claim 6423, wherein said compound is *N*-lauroylethanolamine (NAE12:0), said lecithin is soy lecithin, and said surfactant is polyoxyethylenesorbitan monolaurate.

68. (Currently Amended) The composition of claim 6441, further comprising an alcohol.

69. (Previously Presented) The composition of claim 68, wherein said alcohol is isopropanol.

70. (Currently Amended) A composition comprising:

- (a) at least a first compound selected from the group consisting of NAE10:0, NAE11:0, NAE12:0, NAE13:0, NAE14:0, NAE15:0, NAE17:0, NAE18:0, NAE19:0, NAE20:0, NAE10:1, NAE10:2, NAE10:3, NAE11:1, NAE11:2, NAE11:3, NAE12:1, NAE12:2, NAE12:3, NAE13:1, NAE13:2, NAE13:3, NAE14:1, NAE14:2, NAE14:3, NAE15:1, NAE15:2, NAE15:3, NAE16:1, NAE16:2, NAE16:3, NAE17:1, NAE17:2, NAE17:3, NAE18:1, NAE18:2, NAE18:3, NAE19:1, NAE19:2, NAE19:3, NAE20:1, NAE20:2, and NAE20:3, in an amount of from about 0.1  $\mu$ M to about 1000  $\mu$ M; said amount effective to prolong the freshness or the aesthetic appearance of a plant, a flower, a fruit or a plant cutting;
- (b) at least a first lecithin; and
- (c) a horticulturally-acceptable vehicle that comprises at least a first nutrient source for said plant, flower, fruit, or plant cutting.

71. (Currently Amended) A composition comprising:

- (a) at least a first compound of the formula:



wherein R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl, in an amount of from about 0.1  $\mu$ M to about 1000  $\mu$ M; said amount effective to prolong the freshness or the aesthetic appearance of a plant, a flower, a fruit or a plant cutting;

- (b) at least a first soy lecithin; and
- (c) a horticulturally-acceptable vehicle comprising at least a first alcohol.

72. (Previously Presented) A composition comprising: about 2 g *N*-lauroylethanolamine, about 1 g soy lecithin, and about 0.2 ml polyoxyethylenesorbitan monolaurate per 20 ml of isopropanol.

73. (Currently Amended) A method of prolonging the appearance of a plant, flower, fruit, or plant cutting, said method comprising providing to said flower, fruit, or plant cutting a solution comprising an amount of:

(a) a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl; or

(b) the composition of claim 1 or claim 72,

effective to prolong the appearance of said plant, flower, fruit, or plant cutting.

74. (Previously Presented) A method of increasing the shelf life of a plant, flower, fruit, or plant cutting, said method comprising providing to said flower, fruit, or plant cutting a solution comprising an amount of:

(a) a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl; or

(b) the composition of claim 1,

effective to increase the shelf life of said plant, flower, fruit, or plant cutting.

75. (Previously Presented) The method of claim 74, comprising providing to said flower, fruit, or plant cutting a solution comprising an amount of a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl, effective to increase the shelf life of said plant, flower, fruit, or plant cutting.

76. (Previously Presented) The method of claim 75, wherein said compound is *N*-lauroylethanolamine (NAE12:0) or *N*-myristylethanolamine (NAE14:0).

77. (Previously Presented) A method of extending the freshness or aesthetic appearance of cut flowers, ornamental cut trees, or a plant cutting, said method comprising: providing to said cut flowers, said ornamental cut trees, or said plant cutting, a solution comprising a biologically-effective amount of:

(a) a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl; or

(b) the composition of claim 1,

for a time effective to extend the freshness of aesthetic appearance of said cut flowers, said ornamental cut trees, or said plant cutting.

78. (Previously Presented) The method of claim 77, comprising providing to said cut flowers, said ornamental cut trees, or said plant cutting, a solution comprising a biologically-effective amount of a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl, for a time effective to extend the freshness of aesthetic appearance of said cut flowers, said ornamental cut trees, or said plant cutting.

79. (Previously Presented) The method of claim 78, wherein said compound is *N*-lauroylethanolamine (NAE12:0) or *N*-myristylethanolamine (NAE14:0).

80. (Previously Presented) A method of extending the vase life of a cut flower or plant cutting, said method comprising: providing to said cut flower or plant cutting a solution comprising an effective amount of:

(a) a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl; or

(b) the composition of claim 1,

for a time necessary to extend the vase life of said cut flower or said plant cutting.

81. (Previously Presented) The method of claim 80, comprising: providing to said cut flower or plant cutting a solution comprising an effective amount of a compound of the formula:



where R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl, for a time necessary to extend the vase life of said cut flower or said plant cutting.

82. (Previously Presented) The method of claim 81, wherein said compound is *N*-lauroylethanolamine (NAE12:0) or *N*-myristoylethanolamine (NAE14:0).

83. (New) A composition comprising:

- (a) at least a first compound selected from the group consisting of NAE10:0, NAE11:0, NAE12:0, NAE13:0, NAE14:0, NAE15:0, NAE17:0, NAE18:0, NAE19:0, NAE20:0, NAE10:1, NAE10:2, NAE10:3, NAE11:1, NAE11:2, NAE11:3, NAE12:1, NAE12:2, NAE12:3, NAE13:1, NAE13:2, NAE13:3, NAE14:1, NAE14:2, NAE14:3, NAE15:1, NAE15:2, NAE15:3, NAE16:1, NAE16:2, NAE16:3, NAE17:1, NAE17:2, NAE17:3, NAE18:1, NAE18:2, NAE18:3, NAE19:1, NAE19:2, NAE19:3, NAE20:1, NAE20:2, and NAE20:3, in an amount of from about 1% to about 20%; and
- (b) a horticulturally-acceptable vehicle that comprises at least a first surfactant, and at least a first antifungal, bacteriostatic, or bactericidal agent.

84. (New) A composition comprising:

- (a) at least a first and a second distinct compound, each selected from the group consisting of NAE10:0, NAE11:0, NAE12:0, NAE13:0, NAE14:0, NAE15:0, NAE17:0, NAE18:0, NAE19:0, NAE20:0, NAE10:1, NAE10:2, NAE10:3,

NAE11:1, NAE11:2, NAE11:3, NAE12:1, NAE12:2, NAE12:3, NAE13:1, NAE13:2, NAE13:3, NAE14:1, NAE14:2, NAE14:3, NAE15:1, NAE15:2, NAE15:3, NAE16:1, NAE16:2, NAE16:3, NAE17:1, NAE17:2, NAE17:3, NAE18:1, NAE18:2, NAE18:3, NAE19:1, NAE19:2, NAE19:3, NAE20:1, NAE20:2, and NAE20:3, and each in an amount of from about 1% to about 20%; and

- (b) a horticulturally-acceptable vehicle that comprises at least a first lecithin, and at least a first antifungal, bacteriostatic, or bactericidal agent.

**2. RESPONSE**

**2.1 STATUS OF THE CLAIMS**

*Claims 1-17, 20-50 and 59-82 were pending at the time of the instant Action.*

*Claims 27-50, 62-63 and 73-82 have been indicated as allowable.*

*Claims 1, 27, 64, 67, 68, 70, 71, 73, are amended herein.*

*Claims 83 and 84 are added herein.*

*Claims 1-17, 20-50 and 59-84 are now pending in the case.*

**2.2 SUPPORT FOR THE CLAIMS**

Support for each of the claims as amended herein is provided by the Specification, drawings, and original claims as filed. Applicants certify that no new matter has been introduced as a result of the accompanying amendment. Support for the preferred concentration range of the compounds in new claims 83 and 84 can be found particularly on page 17 (lines 27-34). Support for the preferred concentration range of the compounds in claims 1, 64, and 70-71 can be found particularly on page 18 (lines 18-29).

**2.3 A COPY OF THE SPECIFICATION IS PROVIDED**

Following a request from Examiner Pryor during the Interview on 7/14/2004, Applicants hereby provide a copy of the original specification as filed. Examiner Pryor stated that the original paper copy of the Application received by the Office could not be found and that no copy existed in their electronic database.

## **2.4 A COPY OF THE AMENDMENT AND RESPONSE FILED ON 10/10/03 IS PROVIDED**

Responding to a request from Examiner Pryor during the Interview on 7/14/2004, Applicants also provide herewith a copy of the amendment and response filed on October 10, 2003. It is noted that the instant Action status on the Summary that it is responsive to a paper filed on 03 December 2003. Applicants note, however, that no paper was filed on that date. Instead, Applicants' previous response and amendment was filed on 3 October 2003, which was within the statutory period for responding to the Action dated 3 April 2003.

## **2.5 EXAMINER INTERVIEW**

Applicants appreciate the Interview conducted in the Office on July 14, 2004 with Examiner Pryor and Applicants' undersigned representative, Dr. Mark D. Moore, to discuss the pending claims, and to address the sole issues concerning prior art which remained outstanding in the case with respect to the composition claims. During this interview, agreement was reached with respect to the issues remaining concerning all composition claims, and Applicants now believe all claims to be allowable in view of the amendment and remarks herein.

Applicants appreciate the Examiners' finding that all pending method claims were free of any rejections, and appreciate the Examiner's helpfulness in suggesting particular claim language to more particularly point out and to improve the clarity of the composition claims. Applicants note that agreement was reached in this regard, and believe that Examiner Pryor will now concur that all pending claims are now allowable in view of the prosecution history and in view of the detailed and enabling disclosure of the present specification.

Mindful of the Applicants' small entity status, and in efforts to secure an economically-expedient allowance of particular claims, Applicants' representative also appreciates the

Examiners' agreement to grant this interview to bring to a conclusion prosecution on the merits in this case and to recommend the case for allowance as soon as possible. Examiner Pryor's willingness to provide cost-effective prosecution on behalf of the small-entity Applicants is noted and appreciated.

## **2.6 THE REJECTION OF CLAIMS 64-66 AND 70 UNDER 35 U. S. C. § 102(b) IS OVERCOME**

The Action rejects claims 64-66 and 70 under 35 U.S.C. § 102(b) as allegedly being anticipated by della Valle (U.S. 5,506,224). Applicants respectfully traverse.

The Action at page 2 states that "Della Valle teaches a composition comprising at least an N-acyl compound including N-laurolyethanolamide, N-stearoylethanolamide, N-palmitoylethanolamide, and N-linoleoylethanolamide." The reference is also said to teach that the composition can comprises lecithin and maize oil (carrier), and can be used topically or orally to treat psoriasis in humans.

It is well established that a rejection on the grounds of anticipation requires the disclosure, in a single reference, of every element of a claimed invention and requires that each and every facet of the claimed invention be identified in the applied reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051 (Fed. Cir. 1987); *Ex parte Levy*, 17 USPQ2d 1461 (B.P.A.I. 1990).

Applicants note that the present invention is related to compositions comprising N-acylethanolamines, and their uses in horticultural methods. The present invention is not directed to N-acylethanolamides, the class of compounds said to be taught by this reference. It is well known in the chemical arts that amides and amines are two chemically distinct families of

compounds, each having different properties, both chemically and physically. Thus the reference *does not teach* the compounds of the invention.

Moreover, the reference *does not teach* preferred concentrations of any N-acylethanolamines, and does not teach any amounts of such compositions that are effective to prolong the freshness or the aesthetic appearance of a plant, a flower, a fruit or a plant cutting. Finally, the reference also does not teach horticulturally-acceptable vehicles, and particularly does not teach any horticulturally-acceptable vehicles that comprise one or more surfactants, or one or more plant nutrient sources. The reference does also not teach a composition where the N-acylethanolamine compound is present “in an amount of from about 0.1  $\mu$ M to about 1000  $\mu$ M”; and amount shown by the Applicants to be effective in prolonging the freshness or the aesthetic appearance of a plant, a flower, a fruit or a plant cutting specific As such, *the reference does not anticipate* the claimed invention; Applicants respectfully request that the rejection be withdrawn.

Applicants note for the record that the present clarification of the claims to even further highlight their patentable features, as disclosed in the specification, cannot be held to exclude a range of equivalents from the claims. *James River Corp. of Virginia vs. Hallmark Cards Inc.*, 43 USPQ2d 1422 (DC EWis, 1997), citing *Warner-Jenkinson Co., vs. Hilton Davis Chemical Co.*, 41 USPQ2d 1865 (S. Ct., 1997).

## **2.7 THE REJECTION OF CLAIMS UNDER 35 U. S. C. § 103(A) IS OVERCOME**

Claims 1-17, 22-26, 59-61, and 68-71 were rejected under 35 U. S. C. § 103(a) as allegedly being legally obvious over della Valle in further view of Oden (U.S. 5,580,857) and Kemp (U.S. 5,152989).

Applicants respectfully traverse.

### **2.7.1 THE REJECTION IS IMPROPER AS A MATTER OF FACT**

A finding of obviousness under 35 U. S. C. § 103 requires a determination of the scope and content of the prior art, the level of ordinary skill in the art, the differences between the claimed subject matter and the prior art, and whether the differences are such that the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made. *Graham v. John Deere Co.*, 148 USPQ 459 (U.S. S.Ct. 1966).

The relevant inquiry is whether the prior art suggests the invention and whether the prior art would have provided one of ordinary skill in the art with a reasonable expectation of success. *In re O'Farrell*, 7 USPQ 2d 1673 (Fed. Cir. 1988). Both the suggestion and the reasonable expectation of success must be founded in the prior art and not in the Applicant's disclosure (emphasis added) *In re Vaeck*, 20 USPQ2d 1438 (Fed. Cir. 1991).

Therefore, for the cited combination of references to render the present claims legally obvious under 35 U. S. C. § 103, the references must teach or suggest, either alone or in combination, the particular claimed compositions of the present invention. Respectfully, Applicants assert that the cited references do not.

The disclosure of Della Valle describing pharmaceutical compositions comprising N-acylethanolamides for the treatment of psoriasis has been summarized above.

The secondary reference Oden is said to teach pharmaceutical compositions comprising gibberellins for use in methods of treatment for prostatitis, and other disease of the prostate in humans. Oden does not disclose anything about n-acylethanolamines, nor does it disclose any

horticultural vehicles, or provide any motivation to combine this reference with others to arrive at the present invention.

The secondary reference Kemp is even less relevant. It relates to bath additives containing “aqueous solution of a mixture of amphoteric, anionic, and nonionic substances having a base of a vegetable and/or animal oil and an alcoholic solution having a base of one or more medicinal plants.” The bath additive compositions of Kemp are said to be useful as “agent for the treatment of microbially-induced as well as chronically endogenous skin diseases” in humans.

Neither of these references discloses or suggests a composition, such as that in claim 1, which comprises:

- (a) at least a first compound of the formula:



wherein R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl, in an amount of from about 0.1 μM to about 1000 μM; said amount effective to prolong the freshness or the aesthetic appearance of a plant, a flower, a fruit or a plant cutting;

- (b) at least a first plant hormone selected from the group consisting of an auxin, a gibberellin and a cytokinin; and
- (c) a horticulturally-acceptable vehicle.

Applicants respectfully conclude that as a matter of fact, the rejection is improper, and requests that it be withdrawn.

## 2.7.2 THE REJECTION IS IMPROPER AS A MATTER OF LAW.

Because the claims in the case particularly point out the distinct features of the inventive methods disclosed in the Specification, and because each of such claims is clearly distinguished over the previously cited art (either alone or in combination) Applicant further believes that, as a matter of law, the rejection advanced under 35 U. S. C. § 103 cannot stand.

Applicant urges the application of the standard held in the case of *In re Vaeck*, 20 U.S.P.Q. 1438 (Fed. Cir. 1991), in which the Federal Circuit stated that in order for an examiner to make out a *prima facie* case of obviousness two things must be shown:

- (1) That the prior art would have suggested to those of ordinary skill in the art that they should make the claimed invention; and
- (2) That the prior art must demonstrate a reasonable expectation of success of the invention.

*Both the suggestion and the reasonable expectation of success must be founded in the prior art, not in the Applicant's disclosure (emphasis added).*

Furthermore, in the case of *In re Dow Chemical Co.* (837 F. 2d 469, 5, U.S.P.Q.2d 1529, Fed. Cir. 1988) the court held that an “obvious-to-experiment” standard is not an acceptable alternative for obviousness, and that there must be a reason or suggestion in the art, *other than* the knowledge learned from the Applicant’s disclosure.

In the instant case, however, there is neither the suggestion nor the reasonable expectation of success. Even if one could somehow postulate that one or more of the cited references might suggest one or more of the individual components of the claimed compositions, might, in an abstract sense, be *plausible*, there is certainly no teaching or suggestion as to how one would go about developing the particular compositions as claimed in the present invention,

nor is there any suggestion in the cited references, either alone or in combination, that such an approach would be successful. These references either alone or in combination do not provide the motivation or the teaching for preparing compositions that comprise:

- (a) at least a first compound of the formula:



wherein R is optionally branched or straight chain, saturated or unsaturated C<sub>8</sub>-C<sub>20</sub> alkyl, in an amount of from about 0.1  $\mu\text{M}$  to about 1000  $\mu\text{M}$ ;

- (b) at least a first plant hormone selected from the group consisting of an auxin, a gibberellin and a cytokinin; and
- (c) a horticulturally-acceptable vehicle.

Likewise there is no motivation or teaching that such compositions could be used to effect prolonged freshness or aesthetic appearance of a plant, a flower, a fruit or a plant cutting, nor do these references teach the particular surprising and unexpected results for achieving such prolonged freshness and prolonged aesthetic appearance of plants or plant parts.

Furthermore, the Applicant submits that *the combination of references relied upon by the Examiner also clearly fails to satisfy the tripartite test of In re O'Farrell (7 U.S.P.Q.2d 1673, 1680, Fed. Cir. 1988)*. In *O'Farrell*, the Court held that in order for a reference or references to obviate an invention, it must be shown that the reference(s) contains:

- (1) Detailed enabling methodology for practicing the claimed invention;
- (2) A suggestion for modifying the prior art to practice the claimed invention; and
- (3) Evidence suggesting that the invention would be successful.

In the present case, none of these references provides any teaching relevant to the question of how one of skill in the horticultural arts would be motivated to prepare N-acylethanolamine-based compositions that comprise amount of from about 0.1  $\mu$ M to about 1000  $\mu$ M; said amount effective to prolong the freshness or the aesthetic appearance of a plant, a flower, a fruit or a plant cutting; at least a first plant hormone selected from the group consisting of an auxin, a gibberellin and a cytokinin; and, )a horticulturally-acceptable vehicle.

The references relate to treatment of prostate disorders, bath salts for treating skin disorders, and amide-based compositions for treating psoriasis; they most certainly do not provide any “detailed enabling methodology” for practicing the claimed invention which relates to horticultural compositions for application to plant cuttings and flowers.

Also in the present case, none of the cited references provides any suggestion for combining the teachings of, *e.g.*, Della Valle *et al.*, Kemp *et.al.*, and/or Oden *et al.* in any combination, or for modifying any of these prior disclosures in a manner that would allow one to arrive at the present invention.

Finally, in the present case, none of the cited obviousness references provides any evidence that the particular compositions of the present invention would be successful in anything of a horticultural . Clearly the rejection is improper as it fails the tripartite test of *In re O'Farrell*.

Applicant asserts that any combination of the cited references is, at best, merely an invitation for further experimentation in the field, and at most, an “obvious-to-try” situation. However, there is *no* reasonable expectation of success, *nor* is there the motivation or teaching to guide a skilled artisan how to achieve such success. The Federal Circuit, in the case of *In re Geiger* (815 F.2d. 686, 2 U.S.P.Q.2d 1276, Fed. Cir. 1987), held that obviousness cannot be established by

combining the teachings of the prior art to produce a claimed invention, absent some teaching, suggestion or incentive supporting the combination. Again, Applicant believes that the rejection fails the test of *In re Geiger*.

Further, in *Amgen v. Chugai Pharmaceutical Co. Ltd.*, (927 F. 2d 1200, 18 U.S.P.Q. 2d 1016, 1022, Fed. Cir. 1991) the Court affirmed that obviousness under 35 U. S. C. § 103 is a question of law, and that both the suggestion and the expectation of success must be founded in the prior art, and not in the Applicant's disclosure. Because the suggestion and expectation of success are absent in the cited art, Applicant asserts that the rejection also fails the test of *Amgen v. Chugai Pharmaceutical Co. Ltd.*

Therefore, as a matter of both fact and law, Applicant believes that the obviousness rejection over these references, either alone or in any combination is improper and must be withdrawn.

Because the claims in the case particularly point out the distinct features of the inventive methods disclosed in the Specification, and because each of such claims is clearly distinguished over the previously cited art (either alone or in combination) Applicants believe that, as a matter of fact, the rejection advanced under 35 U. S. C. § 103 cannot stand. Applicants respectfully submit that all aspects of the instant 35 U. S. C. § 103 rejections have been overcome and withdrawal of the rejections is earnestly solicited.

## 2.8 CONCLUSION

In conclusion, in light of the foregoing remarks, Applicants believe that the concerns set forth in the Action have now been overcome and that all pending claims are in condition for immediate allowance. Such favorable action is respectfully requested. Should the Examiner

have any questions concerning the accompanying amendment, response and related papers, a telephone call to the undersigned Applicants' representative would be appreciated.

Respectfully submitted,

WILLIAMS, MORGAN & AMERSON  
CUSTOMER NO. 23720

Date: August 4, 2004

  
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